

RIDES ON THIS LIST REQUIRE NON-DESTRUCTIVE TESTING AND/OR OTHER ACTIONS PRIOR TO OPERATION

The following list of rides are required to have non-destructive testing or other actions completed prior to operation. Non-Destructive Tests must be performed and signed by an individual qualified to non-destructive test (NDT) Level II or III, in accordance with the American Society of Non-Destructive Testing's recommended practice SNT-TC-1A.

Scope:

The Mission/Scope of this List is to provide a REMINDER of Non-Routine Periodic Action (including NDT) to jurisdictions, third party annual inspectors, Owners and Maintenance personnel. The None-Routine Periodic Action maybe required by Manufacturers' Manuals or Bulletins, by Jurisdictions, CPSC, NAFLIC, NAARSO, CARES, or any other national and/or international stake holder, and does not include routine Daily and Weekly inspections and greasing. The List is provided only as an effort to Remind stake holders of the required actions. Users are responsible to exercise due diligence in locating all ride information by themselves and to verify for themselves the accuracy of the information provided in this List. Besides requirements by Manufacturers, which ought to be universally enforced, as well as the CPSC requirements, which ought to be enforced in the US, jurisdictions must decide which other requirements they choose to enforce, each within their particular jurisdiction. Users are advised that the List must never be perceived in any way as inclusive

#	RIDE	MANUFACTURER	COMPONENT(S) IMPACTED	NDT OR OTHER ACTION, FREQUENCY (if applicable)	NDT OR OTHER ACTION REQUIRED BY
1.	Ali-Baba aka 1001 Nacht's	A. R. M.	1. Check for surface cracks in main arm joint weldment, main arm to center weldment, car mounting blocks and car frame weldments, tower bolt blocks weldment, tower to trailer weldment, car slewing ring mounting plate to arm weldment 2. Check for surface cracks in parent metal at weld toes, edges of holes, and flame-cut edges. 3. Check for cracks in drive-shafts in the vicinity of keyways, holes, changes in diam. and other geometric discontinuities. 4. Check for reduction in wall thickness of hollow sections especially at weld toes.	Non-destructive test (NDT) must be completed every 2 years: 1&2 check by Dye Penetrant and Magnetic Particle. 3 & 4 Use Ultrasonic to test drive shafts and wall thickness of hollow sections.	1001 Nacht's or Ali-Baba Operations Manual, Section 6, Pages 6.10, 6.11
2.	Ali-Baba, aka 1001 Nights.	A.R.M	Welds and Parent metal in their direct vicinity in all Critical Areas indicated by drawing on P. 5.09 and described on P. 5.10 of the Manual (section 5).	NDT to be performed annually, contact manufacturer for details.	A.R.M Ali-Baba Manual, section 5.
3.	High Flyer	A.R.M	Welds and Parent metal in their direct vicinity in all Critical Areas indicated by drawing on P. 5.08 and described on P. 5.09 of the Manual (section 5).	NDT to be performed annually, contact manufacturer for details.	A.R.M High Flyer Manual, section 5.

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4.	High Flyer	A. R. M	<p>1. Check for Surface Cracks in the following weldments (particularly along the throat): Main Arm Joint (at mid position), Main Arm To Center, Car Top Beam and Stay Bracket, Tower Bolt Block, Tower To Trailer, Tie Rod End.</p> <p>2. Check for Surface Cracks in Parent Metal at Weld Toes, Edges of Holes, Flamecut Edges, and in all areas of possible stress concentration (contact ARM for details).</p> <p>3. Check for cracks/internal flaws in drive shafts in the vicinity of keyways, holes, changes in diameter, or any other geometric discontinuity.</p> <p>4. Check for Reduction in wall thickness of hollow sections caused by internal corrosion</p>	<p>All NDT to be performed Every 2 years.</p> <p>2. Use Dye Penetrant and Magnetic Particle for Surface Cracks.</p> <p>3. Use Ultrasonic for internal cracks/flaws and wall thicknesses (see High-Flyer Manual P. 6.11)</p>	High Flyer Manual Pages 6.10, 6.11 and 6.12
5.	Quasar	A. R. M.	Lifting Frames, weldment of main hinge boss to Link Assembly, and in the Link Parent Metal	Annual NDT (Electromagnetic and Ultrasonic recommended)	ARM Bulletin S.B/QUA/03/003, dated February 1994
6.	Sky Master	A.R.M.	<p>1. Check Parent Metal for surface cracks at weld toes, edges of holes, flamecut edges and hi stress areas. Check welds for surface cracks.</p> <p>2. Check for reduction in wall thickness in hollow sections due to corrosion, particularly in the vicinity of welds.</p> <p>3. Check for cracks and flaws in drive shafts in the vicinity of keyways, holes, changes of dia., or any other discontinuity.</p>	<p>1. Dye Penetrant or Magnetic Particle for surface cracks of parent metal or welds, every 2 years.</p> <p>2. Ultrasonic Testing for wall thickness of hollow sections, every 2 years.</p> <p>3. Ultrasonic Testing, Magnetic Particle and Dye penetrant for flaws.</p>	Manual pages 5-19 to 5.21 for the detailed requirements.
7.	Sky Master aka Tomahawk	A. R. M.	Refer to your owner's manual, page 5.10	Non-destructive test (NDT) must be completed every 9 months	ARM owner's manual, pages 5.06, 5.08, 5.09, and 5.10.
8.	Sky Master aka Tomahawk	A. R. M.	Over the Shoulder Restraints	Replace all over the shoulder restraints on your ride before the ride turns 5 year old	ARM US Bulletin SB 013007 dated 2/16/07 and Massachusetts Notice of Recommended Action Dated 8/10/06
9.	Touchdown 6 Car	A. R. M.	Diagrams 5.1 and 5.2	Non-destructive test (NDT) must be completed annually	ARM Operation & Maintenance Manual, Section 5
10.	Aerial Trams & Lifts	All	Refer to ANSI	Refer to ANSI	Comply with ANSI 4.34.3B77.1-1982 pertaining to testing of grips or clips
11.	Sky Fighter	Allen Herschell	Stabilizing rods, threads	Non-destructive test (NDT) must be completed annually	U.S. Consumer Product Safety Commission safety notice dated June 9, 1992 and August 2, 2000
12.	Coaster (steel)	Arrow	Track rails, strong back and ties, Saddle welds to strong back, Column welds	Non-destructive test (NDT) must be completed annually or every 2000 hours	Arrow technical bulletin #99-1 dated November 24, 1999

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13.	Corkscrew, Loop and Suspended Coasters	Arrow-Huss	Welded areas of track, anti-roll back units, chain guide wheel spindles, axle housings, wheel carrier weldments, chassis main vertical spindle, body support frame, hitch yoke	Non-destructive test (NDT) must be completed annually	Arrow-Huss bulletin dated November 17, 1981 and January 4, 1988 and the operators Manual
14.	Top Gun Coaster	Bolliger & Mabillard	Per the manufacturer's requirements	Non-destructive test (NDT) must be completed annually	Manufacturers maintenance manual and letter dated December 6, 2000
15.	Ski Lift Grips Borvig	Borvig	Grips	Non-destructive test (NDT) must be completed annually	Borvig instruction manual & drawing. C-3064
16.	Ski Lift Grips Borvig	Borvig	Grips	1/3 of affected grips are to be replaced prior to 11-15-2010. All existing grips are to be 100% NDT tested in order to establish how many grips have indications. If more than 1/3 are found to have indications, those additional grips will also have to be replaced prior to 11-15-2010. Any grips showing severe coining shall also be rejected and will require replacement prior to 11-15-2010. The remaining grips can be used until 11-15-2011 at which time another 1/3 shall be replaced for a total of 2/3 of the original grips and a sufficient quantity of the remaining grips shall be tested that can be put into service until 11-15-2012 at which time they will be replaced as well.	Partek Ski Lifts bulletin 02-030510, Borvig lifts built from 1975-1982
17.	Balloon Races	Bradley & Kaye	Superstructure, sweep support rod	Non-destructive test (NDT) must be completed annually	Balloon Races operations manual 1A thru 4
18.	Aviator	Chance	The area where the sweeps mount to the hub	a. Inspect the clearance between the tower guide rails and the guide blocks (or guide wheels if ride is so equipped). Total clearance (both added together) is 1/4" Maximum. b. Inspect sweep and hub areas as described in Bulletin. If any indications are found, contact Chance immediately for further action. c. Repeat a&b annually. d. Above inspections must be performed by a Certified Visual NDT Inspector	Bulletin No. B410CRM167-0, dated March 22, 2010.

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19.	Century Wheel	Chance	Weld between the main steel tube and the hub plate at the bottom of each gondola (after removing access cover)	Annual visual Non-Destructive Test	Chance bulletin number 406CRM135-0 dated 03-31-05
20.	Century Wheel	Chance	The Two Main Trailer Beams, in the overhang area, as shown on drawing on P. 2 of 2 in the Bulletin	Visual inspection of weld and parent metal around cut outs on both sides of webs and flanges of Main Trailer I-Beams, with the aid of an inspection mirror, within 30 days of Bulletin date, and annually thereafter.	Chance Bulletin No: B406CRM163-0 dated May 15, 2009
21.	Chaos	Chance	Tilt Cylinders	Annually, Magnetic Particle (MT) must be performed by a Level II or Level III NDT Inspector to inspect the areas shown on the detail drawing provided in the relevant referenced bulletin	Bulletin No. B408CRM 168-0, dated August 10, 2010
22.	Trabant	Chance	Boom	Monthly	Chance service bulletin #92
23.	Inverter and Double Inverter	Chance Manufacturing	Vehicle arm, counterweight arm, vehicle arm, adapter box	Non-destructive test (NDT) no longer required after May 6, 2003 - only visual inspection required	Chance 2001 field inspection guide, page 64 and page 66
24.	Falling Star	Chance Rides	Drive sprocket	Non-destructive test (NDT) must be completed annually	Chance Rides bulletin #B391R11440 dated January 7, 1994
25.	Falling Star	Chance Rides	2 Vehicle Axles (Front & Rear)	1. Calculation of Axle's accumulated number of revolutions before Nov3, 2009. 2. Axles that operated through 3 million revolutions or more must be replaced or kept only if they pass annual NDT. 4. Axles that pass NDT <u>may</u> be operated no more that 1 year thereafter, provided they pass annual NDT.	Chance Bulletin number B391CRM166-0, dated October 3, 2009.
25 .	Giant Gondola Wheel	Chance Rides	Torque tube flange	Non-destructive test (NDT) must be completed annually	Chance Rides bulletin #B400R11750 dated May 17, 1996
26.	Pharaoh's Fury	Chance Rides	Cap-screw securing lap bar mount onto the pivot area on each side of the seat. Affected Serial Nos.: 407-00294 and on, production date: June 1994 and after	According to Bulletin B407CRM155-0, dated April 3, 2008, replace all lap bar cap-screws indicated in the preceding field within 60 days of the Bulletin date. Inspect all cap-screws for tightness per bulletin once a month thereafter.	CRM Bulletin B407CRM155-0, dated April 3, 2008.

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27.	Sea Dragon	Chance Rides	Mast	Non-destructive tests (NDT) must be performed initially within 30 days of the receipt of this bulletin, then done annually unless the mast is removed, in that case, there is no NDT required. NDT's are, Visual (VT),Magnetic Particle (MT) and Ultrasonic (UT) as described in bulletin	Chance Rides bulletin B387CRM171-0 Dated October 25, 2011
28.	Sky Wheel	Chance Rides	Bull wheel axle, boom axle	Non-destructive test (NDT) must be completed annually	Chance Rides bulletin #111 and Chance Rides bulletin #B379R1041-0 dated July 17, 1989
29.	Trabant Casino	Chance Rides	Per the manufacturer's bulletin	Non-destructive test (NDT) must be completed annually	Chance Rides bulletin #92 dated December 5, 1974
30.	YoYo	Chance Rides	Sweep lift cylinder (must be removed and sent to Chance for recertification)	Rebuild and recertification Non-destructive test (NDT) must be completed every 5 years	Chance Rides 1999 Field Inspection Test Guide, page 28 and bulletin B376R1077-0
31.	YoYo	Chance Rides	Sweep Lift Cylinder Bearing Assembly	Uncover assembly and insert ¼" gauge between upper bearing nut and gauge plate,	CRM Bulletin B376CRM146-B, Dated Sept 4, 2008
32.	Zipper	Chance Rides	Boom weld at spindle	Non-destructive test (NDT) must be completed annually on all units without the Chance Rides Zipper repair kit.	Chance Rides 1999 Field Inspection and Test Guide, Zipper, page 40 & 41 bulletins B106R1057-0 and A106R1057-A dated May 22, 1990
33.	All Chance Rides	Chance Rides	All permanently installed cap-screws and associated nuts.	Replace components as indicated in the preceding field whenever corrosion and/or damage would require over-torquing to disassemble them, or when they are in service for more than 5 years, whichever occurs first.	The Ride's Field Inspection and Test Guide.
34.	All Chance Rides	Chance Rides	All cap-screws and associated nuts which are frequently disassembled in the portable rides model.	Replace at the beginning of each new operating season. Cap-screws and nuts that become damaged for any reason must be replaced immediately regardless of time in service	The Ride's Field Inspection and Test Guide
35.	Coaster	D.H. Morgan Manufacturing	Axle	Annually, as specified in manufactures manual	D.H. Morgan Manufacturing letters dated March 7, 1988 and June 22, 1994

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36.	Cliff Hanger	Dartron Industries	Car hanger stem, all stem gusset welded joints. A New Back-Up safety Cable System	1. MP test (NDT) must be completed as a one time test on all welds connecting the stem to the arch assembly in rides built prior to January 23, 2004. 2. A back-up safety cable system approved by Dartron must be added. The cable back-up system must include a cable inserted inside the stem and attached to the passenger carrier	Dartron Industries safety bulletin # SR-5K-002 dated January 23, 2004, and attached drawings
37.	Cliff Hangers having Serial Numbers and Production Dates as provided in the referenced bulletin	Dartron Industries	A New Back-up Safety Cable System Connecting the Passenger Carrier Vehicles with the Lower Hanger Block connected to the Sweep (via the Upper Hanger Block)	The Cliff Hangers manufactured in the years listed under "Affected Production Dates" and/or whose Serial Numbers are listed under "Affected Serial Numbers" in Bulletin SR-5K-003, must be retrofitted with the Back-Up Safety Cable System, as per the drawings included in the Bulletin.	Dartron Industries Safety Bulletin # SR-5K-003. Dated January 27, 2004. Please visit the manufacturer website www.dartronrides.com
38.	Cliff Hanger	Dartron Industries	A critical area of support for the bearing base	Install reinforcement plates in a critical area of support for bearing plates, according to the referenced bulletin	Dartron Industries Safety Bulletin # SR-5K-1110-01, dated Nov 9, 2010. No Cliff Hanger is to be operated after Dec 31, 2010 until this bulletin is complied with.
39.	Big Eli Hy-5, Eagle 16 and Double Eagle Wheels	Eli Bridge Manufacturing	Drive-rim removable bolts and pivot bolts.	Ultra sound or X-ray. In addition to NDT requirements, gives wear limits of parts (prompting replacement thereof), torque requirements for bolts, as well as other requirements.	Eli Bridge Manufacturing memo to all owners dated October 7, 2005. Per Patty Sullivan/Eli Bridge, this is a one-time requirement that Eli Bridge will send out new bulletin to clarify.

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40.	Eagle 16 Wheels, Double Eagle 16 Wheels, and HY-5II Wheels	Eli Bridge	All Drive Rim Removable Bolts (and Nuts), and Pivot Bolts (and Nuts)	1. All Bolts and Nuts under “Components Impacted” must be replaced with new ones every 5 years. If bolts’ age is not known, they must be replaced. 2. Annually check the Spoke Tenon Bolt or Hub Bolt connections for wear. If either the bolt or banana is worn 1/32” or more, replace them together with the bolt and banana in the same position on the other side of the spoke stack. 3. If the spoke tenon hole is worn more than 1/32” call Eli Bridge. Notes: a. Torque Drive Rim Bolts in a range of 75 to 100 foot-pounds at each set-up b. Replace any bolt if nut keeps backing off after torquing c. If a nut bottoms out on the thread before the proper torque is reached, insert a regular flat washer between the nut and spoke tab and apply the proper torque. d. If the spoke tab holes wear into ovals, ream and bush them back to original size. Call Eli Bridge for reamers and other parts.	Eli Bridge Bulletin No. 060131-16 dated January 31, 2006. Please refer to the bulletin for more detailed required action.
41.	Monster	Eyerly Aircraft Company	All areas around structural modification, kit components, seat tubing	Non-destructive test (NDT) must be completed annually Non-destructive test (NDT) must be completed every 5 Years	Eyerly Aircraft Company notice dated June 12, 1981 U. S. Consumer Product Safety Council safety alert dated September 13, 1994.
42.	Octopus	Eyerly Aircraft Company	Eccentric, sweep support rods, seat tubing	Non-destructive test (NDT) must be completed annually Non-destructive test (NDT) must be completed every 5 Years	Eyerly Aircraft Company, bulletins #0-48-86 and #0-50-86 --Per US Consumer Product Safety Council bulletin dated August 16, 1994 & September 13, 1994.
	Octopus and Spider	Eyerly	Weldments of the Eccentric Tube Assembly (part number O-436), as shown on referenced Bulletin/Drawing	X-ray, Radiograph, or Magnetic Particle. Please contact Eyerly for testing frequency	Eccentric Crank Bulletin (undated), Drawing Number 0-50-86 (included in Octopus-Spider Electronic Manual).
33.	Octopus and Spider	Eyerly	Octopus Sweep Support Rods numbers 0-956 and 0-393, as well as Spider Sweep Support Rods numbers 0-933 and 0-624, areas A and B as shown on references Bulletin/Drawing.	Magnetic Particle every 200 hours of operation.	Oct./Spider Sweep Support Rod Bulletin (undated), Drawing number 0-48-86 (included in Octopus –Spider Electronic Manual).

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34.	Spider	Eyerly Aircraft Company	Eccentric, sweeps w/16" base, sweep support rods, seat tubing	Non-destructive test (NDT) must be completed annually Non-destructive test (NDT) must be completed every 5 years	Eyerly Aircraft Company, bulletins #0-48-86, #0-49-86, #0-50-86 and #8-88-1 --Per US Consumer Product Safety Council bulletin dated August 16, 1994 and September 13, 1994.
35.	Spider	Eyerly	Wedgments of the Spider Sweep (part number 0-619), as shown on referenced Bulletin/Drawing.	Magnetic Particle, X-ray, or Radiograph. Please contact Eyerly for testing frequency	Spider Sweep 0-619 Bulletin (undated), Drawing number 0-49-86 (included in Octopus-Spider Electronic Manual).
36.	All Far Fabbri Rides	Far Fabbri	All Fasteners assembled & disassembled at each set-up	Annual UT or X-Ray, or if difficult to do, Wet Magnetic Particle may be done, replace defective fasteners	Maintenance Manual. Allowing Wet Mag Particle when UT and X-Ray is difficult to do is per Fabbri Letter Dated 12/18/09
37.	Double Shock	Far Fabbri	Vehicle attachment bolts	Replace Bolts every 3 years, or Annual NDT (contact Fabbri for type of NDT), replace bolts failing NDT.	Operation & Maintenance Manual and per Fabbri Letter Dated May1, 2008. Also see the "All Fabbri Rides" entry.
38.	Raft Ride	Far Fabbri	Centre wheel shaft retaining socket to base frame welds	Annual Visual Inspection. For possible additional NDT contact Fabbri	NAFLIC Bulletin 350, Dated Aug 2008
39.	Kamikaze (aka Ranger, Hi Flyer or Phoenix)	Far Fabbri	Vehicle, tower & counterweight bolts	Non-destructive test (NDT) must be completed annually	Far Fabbri bulletin #FR-034 magnetic particle inspection is NOT acceptable, per Preston Amusement letter dated April 20, 1994. Also see the "All Fabbri Rides" entry.
40.	Ranger, (aka Kamikaze, Sky Flyer, Hammer, Sky Fire)	Far Fabbri	The Two Basil Bearings, the two relative pinions, and all fixing bolts	Replace ALL the components under "Components Impacted" after twenty years from the date of delivery	GAS (Global Amusement Service) Bulletin dated 28/9/2010
41.	Phoenix	Far Fabbri	Vehicle, column & tower bolts	Non-destructive test (NDT) must be completed annually	Far Fabbri bulletin #FR-034 magnetic particle inspection is NOT acceptable, per Preston Amusement letter dated April 20, 1994. Also see the "All Fabbri Rides" entry.
42.	Ranger	Far Fabbri	Vehicle, column and tower, bolts	Non-destructive test (NDT) must be completed annually	Far Fabbri bulletin #FR-034 -magnetic particle inspection is NOT acceptable per Preston Amusement bulletin dated April 20, 1994. Also see the "All Fabbri Rides" entry.
43.	Crazy Dance	Far Fabbri	Sweep hooks & welding	Non-destructive test (NDT) must be completed annually (only applies to 1990–1995 models)	Far Fabbri bulletin #FC 002
44.	Hi Flyer	Far Fabbri	Secondary sweep ends	Non-destructive test (NDT) must be completed annually	Far Fabbri Bulletin #FR-034 magnetic particle inspection is NOT acceptable, per Preston Amusement letter of April 20, 1994

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45.	Sling Shot	Funtimes (Hnadeks Gesmbh)	Swivel shaft and capule welds - refer to operators manual	Per operators manual every year. Paint must be removed every 5 years and weld inspection be completed.	Operators Manual
46.	Merry Mixer (Ground Mount rides only)	Garbrick Manufacturing	Seat spindles	Non-destructive test (NDT) must be completed annually for all GROUND mounted Merry Mixers. Trailer mounted rides do not require NDT.	Manufacturer's safety alert letter to all Merry Mixer ride owners dated July 3, 1991
47.	360 Degree (aka Typhoon)	General Kiddie Rides, Inc.	Main axle & axle housing, welded on shoulder supports, welded areas of legs, welded areas of counterweight, revision of the gear teeth that support the shoulder harnesses	A Magnetic Particle and Dye Penetrant non-destructive test (NDT) must be completed annually A visual non-destructive test (NDT) must be completed every 3 months	(ASTM), F-24 Committee Standards on Amusement Rides and Devices Manufacturer, General Kiddie Rides letter dated March 21, 1991
48.	70 Degree (aka Pirate Ship or Viking Ship)	General Kiddie Rides, Inc.	Main axle & axle housing, welded areas of legs, change of security belts	A Magnetic Particle, Dye Penetrant and X-ray non-destructive test (NDT) must be completed annually A non-destructive test (NDT) must be completed annually	(ASTM), F-24 Committee Standards on Amusement Rides and Devices Per Manufacturer, General Kiddie Rides letter dated March 21, 1991
49.	Pirate Ship (aka 70 Degrees or Viking Ship)	General Kiddie Rides, Inc.	Main axle, axle housing, weld area of legs	A visual non-destructive test (NDT) must be completed annually Magnetic particle, Dye Penetrant and X-ray must be complete every 3 years	(ASTM), F-24 Committee Standards on Amusement Rides and Devices Manufacturer, General Kiddie Rides letter dated March 21, 1991
50.	Typhoon (aka 360 Degrees)	General Kiddie Rides	Main axle and axle housings, welded on shoulder supports, welded areas of legs, revision of the gear teeth that support the shoulder harnesses, change of security belts, welded areas of counterweight	Non-destructive test (NDT) must be completed annually A visual inspection is required every 3 months	(ASTM), F-24 Committee Standards on Amusement Rides and Devices Manufacturer, General Kiddie Rides
51.	Viking Ship (aka Pirate Ship or 360 Degrees)	General Kiddie Rides, Inc.	Main axle and axle housings, Welded areas of legs	Non-destructive test (NDT) must be completed annually	(ASTM), F-24 Committee Standards on Amusement Rides and Devices Manufacturer, General Kiddie Rides
52.	Steel Coaster cars	Gerstlauer	Per the manufacturer's requirements	Non-destructive test (NDT) must be completed annually	Manufacturers requirements
53.	Ejection Seat Permanent 120'	Gravity Works	Towers' leg to flange welds (about 40' up from ground)	Magnetic particle, annually, plus complete owner inspection of towers every 2000 launches	Gravity Works letter to Ejection Seat owners, dated circa July, 2000
54.	Hustler and Tempest	Grover Watkins	Per the manufacturer's requirements	Non-destructive test (NDT) must be completed annually	Manufacturer's safety bulletin dated August 24, 1978 & CPSC safety bulletin
55.	Swinger	Grover Watkins	Per bulletin	Non-destructive test (NDT) must be completed annually	Comply with CPSC bulletin dated June 21, 1996
56.	Rock Spin & Roll	Hampton	Tub shafts	Non-destructive test (NDT) must be completed annually	Hampton bulletin #107-91

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57.	Tubs of Fun	Hampton	Both main shaft (spindle) and tub shafts (spindles)	UT testing must be completed annually on rides made before January 1, 1979.	Hampton Rides Bulletin #104-90, and Hampton Rides Bulletin #3105-90 which is an addendum to #104-90 and #105-90
58.	All Rides	Hi-Lite	All Components	Complete Overhaul at the Manufacturer's plant (every 10 years)	Rides' Manuals
59.	Paratrooper	Hrubetz/ Kilinski, Man Co, Dartron	Spindle, main spindle hub housing	Non-destructive test (NDT) must be completed annually	Man Co Manufacturing Company bulletin #QC-UI-I, Rev. 3; Bulletin #QC-MI-1-Rev O; and bulletins BU-136MC and BU-138MC Per Dartron bulletin #BU 201 PR 01 dated January 15, 2002
60.	Enterprise	Huss	Bearing block holders, car structure parts of the roof and parts above, at and below pivot pins; and for cracks in the welds of these parts and the welds that attach these parts.	Non-destructive test (NDT) must be completed annually	U.S. Consumer Product Safety Commission - Enterprise Ride Interim Corrective Action Plan dated December 7, 1993.
61.	Rainbow	Huss	Bevel gears	Non-destructive test (NDT) must be completed after every 5,000 hours of operation	Huss recommended checking procedure dated January 5, 1990
62.	Break Dance	Huss	Booms, Particularly the break area at the gondola	Buyer of used ride beware of requirements of UT testing in the referenced Vekoma Alert-Service Letter	Huss "Alert relating to amusement ride Break Dance Service Letter No. 17-10, dated 05-09-05
63.	Super Twist	King	Per the manufacturer's requirements	Non-destructive test (NDT) must be completed annually	The manufacturer's requirements
64.	Swinger	King	Per the manufacturer's requirements	Non-destructive test (NDT) must be completed annually	The manufacturer's requirements letter dated August 10, 1989
65.	After Burner	KMG	Swing arm weld of 12 sided tube to bottom bearing flange	One time magnetic particle test of welds. Required corrective action is to repair any cracked welds, and to install gussets to preclude future cracking.	KMG bulletin number FRBSB006, dated August 8, 2007, impacting ride serial numbers FRB-24-XX
66.	After Burners, Serial Numbers KMG-XXXXFRB-24-XXX-001 through and including KMG-XXXX-FRB-24-XXX-036	KMG	Over-the Shoulder Restraints	One time immediate action before January 31, 2010, or ASAP if not done by then. Action includes removal of padding, visual inspection, and repair as necessary, according to procedures spelled out in the bulletin.	KMG Service Bulletin FRB24-SB007, dated December 7, 2009.

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67.	Freak-Out	KMG	Major Structural and critical welds (contact KMG for details)	Annual Inspection by Level 1 or higher NDT company, including visual and NDT as needed. Inspection report, including welds NDT to be forwarded to KMG annually.	Manual, Section 3.3.1
68.	Freak-Out	KMG	Bolts as shown on Figure 5 of Section 3.3.2.	Replace bolts annually.	Manual, Section 3.3.2, Figure 5.
69.	Super Loop, Ring of Fire	Larson International	Hinge pins on units	Non-destructive test (NDT) must be completed every 5 years	Larson International service bulletin #94-1 dated July 18, 1994
70.	Caterpillar (Raupenbahn)	Mack	Center plate, sweeps, sweep bolts, holder for cover, gondola support frames, gondola support bolts, gondola frames, safety bars, track, supports, base structure, center decoration, center structure	Non-destructive test (NDT) must be completed every 10 years or after 20,000 hours-some parts Non-destructive test (NDT) must be completed every 5 years or after 10,000 hours-some parts Monthly visual and dye penetrant, if crack is suspected	Per NDT Guidelines for MACK Caterpillar” (Raupenbahn)
71.	Cortina Bob	Mack	Safety bars, gondola supports, track, supports, base, center decoration, center structure	Non-destructive test (NDT) must be completed every 5 years or after 10,000 hours and monthly visual. If cracks are suspected non-destructive test/dye penetrant must be completed annually	Cortina Bob Operator’s Manual
72.	Himalaya	Mack	Center plate, sweep bolts, sweeps, gondola bolts, gondola frames, safety bars, gondola supports, track, supports, base, center decoration, center structure	Non-destructive test (NDT) must be completed every 10 years or after 20,000 hours/some parts Non-destructive test (NDT) must be completed every 5 years or after 10,000 hours/some parts Monthly visual and if cracks are suspected a non-destructive test/dye penetrant must be performed annually	Mack Operator’s Manual
73.	Matterhorn	Mack	Refer to test guidelines	Refer to test guidelines	Manufacturer’s test guidelines and letter dated January, 2000

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74.	Music Express	Mack	Center plate, sweep bolts, sweeps, gondola supports, gondola bolts, gondola frames, safety bars	Non-destructive test (NDT) must be completed every 10 years or after 20,000 hours Non-destructive test (NDT) must be completed every 5 years or after 10,000 hours	Music Express Operator's Manual
75.	Round up	Man Co Manufacturing	Main boom rocker shaft, cylinder anchor shaft, spindle, main spindle hub housing	Semi-Annually as follows: For Round-Up rides operating in Illinois on or between April 1 and Oct. 31; the NDT must be performed after March 22 and before operation. For Round-Up rides operating in Illinois on or between Nov. 1 and March 31; the NDT must be performed after Oct. 22 and before operation.	Man-Co Manufacturing bulletin CO QC-UI-I, Rev. 3: QC-MI-1-Rev O; and bulletins BU-136MC and BU-138MC, and Dartron bulletin BU0201 PR01, dated January 15, 2000 Unless at the time of the NDT inspection, the Department places a seal upon the ride prohibiting the assembly and operation until the Department removes that seal.
76.	Fireball	Man Co Manufacturing Company	Spindle, main spindle hub housing	Non-destructive test (NDT) must be completed annually	Man Co Manufacturing Company #QC UI-I; Rev. 3: #QC-MI-1, Rev. O; and bulletins #BU-136MC and #BU-138MC
77.	Matterhorn	Matterhorn/Petersburger Schlittenfahrt	Sweep slew rings, sweep bolts, sweeps, wheel axles, gondola, bearing pins, intermediate, rods, gondola frames, safety bars	As specified in the Matterhorn/Petersburger Schlittenfahrt's operator's manual	Matterhorn/Petersburger Schlittenfahrt's operator's manual
78.	Coaster, kiddie	Miler (only applies to coasters built after 1991)	Truck & structure, car bodies & frames, wheels & axles, hitch assy., lap-bar assy.	Non-destructive test (NDT) must be completed annually on all coasters built after 1991	Miler Coaster Operation Manual, pages 15-17
79.	Wood Coaster Vehicles	Morgan	Per the manufacturer's requirements		Manufacturer's requirements per letters dated March 7, 1988 and June 22, 1994
80.	Coaster, full size	Philadelphia Toboggan Company	Tractor wheel frame, axle, friction wheel frame, square head axle, clutch axle, clutch, coupler pin, draw head front, draw head rear	Non-destructive test (NDT) must be completed annually	Philadelphia Toboggan Company bulletins dated April 22, 1988 and December 10, 1992
81.	Coaster, Junior Size	Philadelphia Toboggan Company	Rear coupler, front coupler, frame, spindle, spindle frame	Non-destructive test (NDT) must be completed every 2 years	Per Philadelphia Toboggan Company bulletin dated April 22, 1988
82.	Zyklon Loop	Pinfari	Welded structural joints, center plate, sweep bolts, sweeps, gondola bolts, gondola frames	Non-destructive test (NDT) must be completed after each 960 hrs of use Non-destructive test (NDT) must be completed every 10 years or after 20,000 hours	Zyklon Loop Maintenance Manual, page 19

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83.	Zyklon Loop	Pinfari	1. Cars' Components, including Chassis, Axles, Wheel Pins, and Front Axle Fork. 2. Vertical Structures. 3. Tracks.	1. Chassis: Biennial Visual inspection by an NDT technician, Liquid Dye Penetrants if in doubt. 2. Axles: Annual UT. 3. Wheel Pins Biennial UT. 4. Front Axle Forks: Biennial UT. 5. Visual Inspection by an NDT technician of Tracks <u>and</u> Vertical Frames, Liquid Dye Penetrants if in doubt. For NDT frequency, please contact Carlo Guglielmi (see e-mail next column)	Per Pinfari Fax dated 2/11/2000. Contact Carlo Guglielmi at: carlo@italint.com For frequency of vertical frames inspection by an NDT technician. Daily track and vertical structures inspection by operators.
84.	Explorer (Matterhorn)	Revershon	Capsule support axle	Non-destructive test (NDT) must be completed semi-annually or every 1000 hours	Revershon's owner's manual
85.	Frog Hopper and Rodeo Rider	S & S Power, Inc.	Boom and base welds (refer to bulletin) every three (3) years As shown on bulletin	Non-destructive test (NDT) must be completed annually MT/PT every 3 years	S & S Power, Inc. bulletin # 03.10.10 dated October 9, 2003 S & S Drawing Numbers F-FRG-BOO-W-@, 002125, and 002278 on Frog Hopper/Rodeo Rider
86.	Turbo Force Stratosphere	Soriani	Tie rods	Non-destructive test (NDT) must be completed annually on rides made before 2004 with specific serial numbers	Soriani bulletin #2004 TF02 dated September 14, 2004
87.	Super Loop on top (Crazy Flip)	Soriani & Moser	Gondola arms joint	Non-destructive test (NDT) must be completed annually	Soriani & Moser Logbook pages 53, 54
88.	Orbiter (Predator)	Tivoli	Car attachment pins	Non-destructive test (NDT) must be completed annually	Tivoli bulletin #00120 dated December 10, 1990
89.	Predator (Orbiter)	Tivoli	Car attachment pins	Non-destructive test (NDT) must be completed annually	Tivoli bulletin #00120 dated December 10, 1990

#	RIDE NAME	MANUFACTURER NAME	COMPONENT(S) OR FEATURE(S) IMPACTED	NDT OR OTHER ACTION, FREQUENCY (if applicable)	NDT OR OTHER ACTION REQUIRED BY
90.	Scorpion rides, Serial numbers: 4870230, 4871230, 4886230	Tivoli	Pivot balls, main sweep flange bolts	Mag Particle or UT Non-destructive test (NDT) must be completed every 2 years on the impacted components as follows: <ul style="list-style-type: none"> a. Pivot balls: test 7 balls every 2 years. Document the tested balls and test results. If any ball fails, test all balls and replace balls that fail. b. Sweep Flange Bolts: Test all bolts every 2 years. If one bolt fails, all bolts must be replaced. 	Per Tivoli bulletin #001 for the Scorpion Ride
91.	Scorpion rides, Serial numbers: 4870230, 4871230, 4886230	Tivoli	Ride Structure Weldments	Visual Inspections of all welds on all the structural components, including Center, Sweeps, Spinner Sweeps, Center/Trailer attachment areas and vehicle frames is required every 2 years. Report all problems to the manufacturer before any repairs are made.	Tivoli Scorpion Bulletin #001, undated.
92.	Spin Out aka The Claw, Maelstrom, El Nino	Tivoli	Refer to bulletin	Non-destructive test (NDT) must be completed annually	Tivoli bulletin #SOSA0001-SOSA13 and U.S. Consumer Product Safety Commission safety alert dated March 30, 2004
93.	Star Force	Tivoli	Vehicle frame, car pivot ball, vehicle sweeps, sweep spreader, main sweep arms	Non-destructive test (NDT) must be completed annually	U.S. Consumer Product Safety Commission safety alert dated September 13, 1994
94.	SFC & SLC (Suspended Family Coaster & Suspended Looping Coaster)	Vekoma	L2/L3 Brake Shoe of rides manufactured before 24-08-2001, having the SNs provided in bulletin	One time action to secure Brake Shoes against "falling down from a suspended brake by a single point failure", as detailed in referenced bulletin	Vekoma bulletin No. 1-SB-003-011106, impacting all rides manufactured after 24/8/2001
95.	Corkscrew, MK 1200, MK-900 and Suspended Looping Coasters	Vekoma	Main axle, wheel spindles, guide sheels, up stop wheels, coupling, anti-roll backs, chassis	Non-destructive test (NDT) must be completed annually	Per Velcoma Coaster Technical bulletins #V90-3 and #V90-4

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96.	Suspended Looping Coaster	Vekoma	Suspended Seats.	Welds marked in blue in the Suspended Seat Drawing in Bulletin are to be tested by MT, whereas welds marked in red are to be tested by UT. Please contact Manufacturer regarding frequency of testing.	Vekoma Bulletin No. 1-SB-006-14052009, dated May 20, 2009.
97.	All Venture Rides	Venture	All Components subject to examination, replace parts as needed	Complete Ride Overhaul every 10 years	Per Venture-Go-Round operators manual Hi-Lite of Greer South Carolina is the authorized parts supplier for Venture Rides (Now defunct) and willing to perform 10 year overhauls
98.	Parachute Tower	Venture	Cylinder path, Cylinder Clevis, elevator head, tower base plate, 12" sheave shafts, attachments—turn buckle	Non-destructive test (NDT) must be completed every 5 Years	Venture manual, Section 3.1.5.3
99.	Hustler	Watkins	Secondary sweep shafts, car center pins	Non-destructive test (NDT) must be completed annually	IL Carnival-Amusement Safety Board – Refer to Grover C. Watkins Inc., Emergency Safety Bulletin for Tempest dated August 24, 1978. Per the U.S. Consumer Product Commission Safety bulletin dated August 4, 1993 (car center pins)
100.	Swinger	Watkins	Upright tube	Visual at every set up, if cracks are observed non-destructive test (NDT) must be completed annually	U.S. Consumer Product Safety Commission safety alert dated June 21, 1996
101.	Tempest	Watkins	Secondary sweep shafts, car center pins	Non-destructive test (NDT) must be completed annually	Grover C. Watkins Inc., emergency safety bulletin, dated August 24, 1978, and U.S. Consumer Product Safety Commission Safety bulletin dated August 4, 1993.
102.	Adult Coaster Cars	Wisdom	Inspection of Wheel Bracket Assembly	Visual & dye penetrant or magnetic flux	Wisdom bulletin dated February 25, 2004. Drawing number 9C 025
103.	Avalanche	Wisdom	Check to ensure that the speed of ride rotation is 21 RPM in both directions, each time you repair or replace the Charlyn Hydraulic Drive Motor.	If speed is over 21 RPM switch the two hoses on the repaired or replaced motor. If still over 21 RPM, do not run the ride and contact Wisdom. Frequency: every time the said motor is repaired or replaced.	Wisdom Service Bulletin, Dated February 23, 2009
104.	Gravitron	Wisdom	Console Post	Annually, Turn Off Main Electrical Power, Lock Out the Disconnect, then visually inspect welds and parent metal for cracks, as detailed in Bulletin.	Part of a Gravitron Bulletin Package dated Aug 12, 1993

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105.	Gravitron	Wisdom	Underwing 7/8" diameter x 8" long alignment bolts	Replace all Table alignment bolts annually	Wisdom Gravitron/Starship bulletin dated June 1, 2004
106.	Gravitron	Wisdom	Eight Platform Hinges	1. When the wing is folded, remove the hinge bolts one at a time and inspect the hinge for cracks and or wear. 2. Contact Wisdom for hinge wear tolerance. 3. Perform this inspection annually.	1. Wisdom Gravitron/Starship bulletin dated June 1, 2004. 2. Annual Frequency of testing per Vic Wisdom written response to Dan Ang of N.J, dated 10/15/04.
107.	Gravitron	Wisdom	Eight Platform hinge bolts	Inspect to insure hinge bolts are in good condition. 1. When ride is set-up, loosen the hinge nut ½ turn 2. Use a torque wrench preset to release when a torque of 50 ft-lbs is reached to turn the bolt head. 3. If the bolt can be turned with a torque less than 50 ft-lb, take it out and check wear. 4. Replace worn bolts (or contact Wisdom for questions on tolerance). 5. Perform this inspection annually.	1. Wisdom Gravitron/Starship bulletin dated June 1, 2004. 2. Annual Frequency of testing per Vic Wisdom written response to Dan Ang of N.J, dated 10/15/04.
108.	Himalaya one truck	Wisdom	Secondary sweep ends	After the installation of the sweep kit, Non-destructive test must be performed annually, and the visual weekly.	Wisdom service bulletins dated March 15, 2000, and November 12, 2000 and clarified by V. Wisdom's letter of January 31, 2001
109.	Himalaya, One Truck	Wisdom	Wheel Shafts	Visual annually, replace if wear is perceptible, UT every three years of continuous operation	Manual's Maintenance section (P45, e-Manual P 51), item 9. E-mail from Wisdom to Doug Rathbun/Illinois, dated 11/16/2010
110.	Himalaya Silver Streak, Family	Wisdom	Sweeps	Non-destructive test (NDT) must be completed annually unless sweep kit installed	Wisdom service bulletin dated April 22, 2002
111.	Himalaya, Square Top (aka One Truck)	Wisdom	Wheel Shafts	Replace if wear is noticed. After 3 years of service, test shafts with UT (contact manufacturer for frequency)	Manual Page 45, item 9 (Wisdom contacted by e-mail to clarify NDT frequency).
112.	Laser Ship	Wisdom	Ears and their weldments, see bulletin	Magnetic Flux, Non-destructive test (NDT) must be completed annually (per Vic Wisdom not clear in bulletin)	Wisdom's service bulletin dated November 1, 2005
113.	Magic Carpet	Wisdom	Main pivot shaft, seat pivot pin	Non-destructive test (NDT) must be completed annually	Wisdom's inspection guide requirements, seat pivot pin Fabricated and Rebuilt Rides, page 10, item 9

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114.	Sizzler	Wisdom	Cabbage head ears, main center pole shaft	Non-destructive test (NDT) must be completed annually	Wisdom's inspection guide, Fabricated & Rebuilt Rides, page 2, item 11 and drawing 01-100 and bulletin dated June 3, 1985 and July 1994
115.	Storm	Wisdom	All Welds	Annual Visual Test by an AWS Certified Welding Inspector, or Equivalent	Storm Manual, Inspection & Maintenance, Item 5 under Annual Inspection
116.	Twizzler	Wisdom	Car frames, rod ball swivel ends, frame pivot bushing, drive rim	Non-destructive test (NDT) must be completed annually visual	Wisdom's letter dated February 22, 2001 and the operators manual
117.	Crazy Bus	Zamperla	Welds on rotating hub flange	Non-destructive test (NDT) must be completed annually (only applies to rides built from 1990-1995)	Zamperla service bulletin #99CB1 dated June 28, 1999
118.	Crazy Bus	Zamperla	Motor Brake Liner	Quarterly Visual Inspection (every 3 months)	Zamperla Bulletin No: 08CB02, dated Nov 14, 2008
119.	Dragon or Tornado Coaster	Zamperla	Vertical spindles	Non-destructive test (NDT) must be completed annually	Zamperla maintenance bulletin dated January, 1991
120.	Enterprise, Mini	Zamperla	Vertical spindle	Non-destructive test (NDT) must be completed annually only if cracks are suspected	Zamperla maintenance bulletin dated January, 1991
121.	Lolli Swing	Zamperla	Center section (must check for reinforcements)	Weekly visual Non-destructive test (NDT) must be completed annually on all units without factory reinforcement	Zamperla bulletin #97LS.1 dated March 20, 1998
122.	Mini Enterprise	Zamperla	See Zamperla bulletin number 2002 ME01, dated December 6, 2002 and attached drawing	One time Magnetic Particle testing of welds, different locations. (See bulletin drawing) Monthly visual inspection of the welds thereafter.	Zamperla bulletin number 2002 ME01, dated Dec. 6, 2002 and attached drawing, plus Zamperla email dated 1/10/08.
123.	Samba Balloon	Zamperla	Center column base, center frame structure	Non-destructive test (NDT) must be completed annually For rides manufactured after December 8, 1997, if Zamperla repair kit has been installed, a non-destructive test (NDT) is not required	Zamperla bulletin #97SB1 dated December 8, 1997
124.	Speedway	Zamperla	Support bars	Non-destructive test (NDT) must be completed annually	Zamperla service bulletin #99-SW1 REV dated July 2, 1999
125.	Power Surge	Zamperla	Welds on the arms, Particularly the areas as shown in the "attached" drawing.	Monthly, remove decorative panels and Visually Inspect welds as specified in bulletin and in preceding field.	Bulletin number 2008 PS01, dated 23 June, 2008, and attached drawing.

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126.	Jump Around	Zamperla	Hardware attaching Sweep Arms to Ride Center	<ol style="list-style-type: none"> 1. Disassemble and inspect Sweep arms and ride Center, as well as hardware attaching the Sweep Arms to the Ride Center, annually. 2. Add Lubrication Grease Fittings to Upper and Lower Sweep Arms. 	Bulletin No. 2009, JA-01 explains required action and list the serial numbers of the rides covered whereby.
127.	Wave Swinger	Zierer	Various.	Numerous (see chart for Test Method Code Legend). Frequency also varies. (see chart for Time Code Legend).	Zierer bulletin (no English bulletin number) dated March 28, 2005. Gives NDT requirements, detailed wear limits on parts (prompting replacement thereof). Plus maintenance instructions.